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7585197, B2003-05-8520B-005, C2003-05-7445-011; 20030421.

**Title**
A low-cost driving simulator for full **vehicle** dynamics **simulation**.
**Author(s)**
Huang-A-R-W; Chihsieh-Chen.
**Author affiliation**

Dept of Mech Eng, Nat Changhua Univ of Educ, Taiwan.

**Source**

IEEE-Transactions-on-Vehicular-Technology (USA), vol.52, no.1, p.162-72, Jan. 2003. , Published: IEEE.

**CODEN**

ITVTAB.

**ISSN**

ISSN: 0018-9545, CCCC: 0018-9545/03/ (\$17.00).

**Availability**

SICI: 0018-9545(200301)52:1L.162:CDSF; 1-G.

**Publication year**

2003.

**Language**

EN.

**Publication type**

J Journal Paper.

**Treatment codes**

A Application; P Practical.

**Abstract**

This paper describes the construction of a low-cost PC-based driving simulator that can perform five degree-of-freedom (DOF) motions similar to a road **vehicle**. The mathematical equations of **vehicle** dynamics are first derived from the 2-DOF **bicycle** model and incorporated with the tire, steering, and suspension subsystems. The equations of motion are then programmed by MATLAB, transferred into C++ code in the MIDEVA environment, and further developed into a motion platform control program by C++Builder. To achieve the simulator functions, a motion platform that is constructed by five hydraulic cylinders is designed, and its kinetics/inverse kinetics analysis is also conducted. Driver operation signals such as steering wheel angle, accelerator pedal, and brake pedal positions are measured to trigger the **vehicle** dynamics calculation and further actuate the cylinders by the motion platform control program. In addition, a digital PID controller is added to achieve the stable and

accurate displacements of the motion platform. The experiments prove that the designed simulator is adequate in performing some special road driving situations discussed in this paper. (45 refs).

**Descriptors**

automotive-electronics; control-system-analysis-computing; digital-control; engineering-computing; road-traffic; three-term-control; vehicle-dynamics.

**Keywords**

full **vehicle dynamics simulation**; low cost driving simulator; degree of freedom; steering; suspension; tire; MATLAB; computer **simulation**; hydraulic cylinders; kinetics inverse kinetics analysis; operation signals; steering wheel angle; accelerator pedal; brake pedal positions; digital PID controller; motion platform.

**Classification codes**

B8520B (Automobile electronics).  
C7445 (**Traffic** engineering computing).  
C3360B (**Road-traffic** system control).  
C7420D (Control system design and analysis).  
C1310 (Control system analysis and synthesis methods).

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☒ document 2 of 9 [Order Document](#)
**INSPEC - 1969 to date (INZZ)**
**Accession number & update**

7876769, C2004-04-7445-007; 20040301.

**Title**
2DSIM: A prototype of nanoscopic **traffic simulation**.
**Author(s)**

Ni-D.

**Author affiliation**

Sch of Civil &amp; Environ Eng, Georgia Inst of Technol, Atlanta, GA, USA.

**Source**

IEEE IV2003 Intelligent Vehicles Symposium. Proceedings, Columbus, OH, USA, 9-11 June 2003.  
Sponsors: IEEE Intelligent Transportation Syst. Council.  
In: p.47-52, 2003.

**ISSN**

ISBN: 0-7803-7848-2, CCCC: 0 7803 7848 2/2003/ (\$17.00).

**Availability**

Also available on CD-ROM in PDF format.

**Publication year**

2003.

**Language**

EN.

**Publication type**

CPP Conference Paper.

**Treatment codes**

P Practical.

**Abstract**

This paper reviews and compares car-following and **lane-changing** logics embedded in some microscopic **traffic simulation** models, and comments are made on the existing techniques of **traffic simulation**. Future directions of **traffic simulation** are identified in three aspects: **vehicle** modeling, driver modeling, and **vehicle movement** modeling. To illustrate these ideas, a conceptual **model**, 2DSIM, is proposed, which consists of a dynamic **vehicle sub-model** and an intelligent driver sub-model. They are further integrated into a **driver-vehicle-environment** closed-loop system which constitutes the basic building block of road **traffic**.

**Descriptors**

automobiles; closed-loop-systems; neural-nets; road-traffic;  
simulation; traffic-engineering-computing.

**Keywords**

2DSIM; prototype; nanoscopic **traffic simulation**; car following logics; **lane** changing logics; microscopic **traffic simulation** models; **vehicle** modeling; driver modeling; **vehicle movement** modeling; conceptual **model**; dynamic **vehicle** submodel; intelligent driver submodel; closed loop

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**Accession number & update**

6644583, C2000-08-3360B-022; 20000701.

**Title**

 An object-oriented **traffic simulation model** for intersection signal control.

**Author(s)**
Agarwal-P; Cheu-R-L; Chan-W-T; Chew-E-P; Ong-C-J; Ed. by Kumar-B; Topping-B-H-V.
**Author affiliation**

Dept of Civil Eng, Nat Univ of Singapore, Singapore.

**Source**

Novel Design and Information Technology Applications for Civil and Structural Engineering, Oxford, UK, 13-15 Sept. 1999.

In: p.215-22, 1999.

**ISSN**

ISBN: 0-948749-63-6.

**Publication year**

1999.

**Language**

EN.

**Publication type**

CPP Conference Paper.

**Treatment codes**

A Application; P Practical.

**Abstract**

A microscopic **traffic** simulator capable of modeling **vehicle** movements, **traffic** signal and detector operations at an intersection neighbourhood is necessary to study **traffic** data quality and **traffic** control strategy. The lack of such a tool has motivated the development of an object-oriented, time-stepping intersection-based **simulation model** named NUSSIM, currently running on a personal computer. In NUSSIM, the road, signal and detector infrastructures, and vehicles are modeled as objects. Rules are used to control the interactions between objects in the system. The intersection's road infrastructure is constructed by connecting discrete **lane** segments. Other than straight, left and right turn movements, vehicles also exhibit car following and gap seeking behaviour. Vehicles also respond to the **traffic** signals, the latter modeled by a signal controller and a set of signal heads. Detector operation is replicated to collect data for **traffic** control and research studies. The object class definitions and rules have been written as 11 modules in the **simulation** code. The open architecture in the program code helps to facilitate future expansion. The **model** is currently undergoing calibration at a typical local intersection. Future expansion of NUSIM to include **vehicle** movements between two adjacent intersections, and signal co-ordination will be made. (10 refs).

**Descriptors**
data-acquisition; digital-simulation; microcomputer-applications;



object-oriented-methods; road-traffic; traffic-control; traffic-engineering-computing.

**Keywords**

object oriented **traffic simulation**; intersection signal control; microscopic **traffic** simulator; **vehicle movement** modeling; **traffic** data quality; **traffic** control strategy; NUSSIM; personal computer; time stepping **model**; detector infrastructures; discrete **lane** segments; car following; gap seeking; turn movements; signal controller; signal heads; data collection; object class definitions; **simulation** code; open architecture.

**Classification codes**

C3360B (Road-traffic system control).  
C7445 (Traffic engineering computing).  
C6110J (Object-oriented programming).  
C6130 (Data handling techniques).

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☒ document 7 of 9 [Order Document](#)**INSPEC - 1969 to date (INZZ)****Accession number & update**

5514615, C9704-7445-017; 970311.

**Title**A microscopic **traffic** simulator for evaluation of dynamic **traffic** management systems.**Author(s)**[Qi-Yang](#); [Koutsopoulos-H-N](#).**Author affiliation**

Dept of Civil &amp; Environ Eng, MIT, Cambridge, MA, USA.

**Source**Transportation-Research-Part-C (Emerging Technologies)(UK), vol.4C, no.3, p.113-29, June 1996. ,  
Published: Elsevier.**ISSN**

ISSN: 0968-090X, CCCC: 0968-090X/96/ (\$15.00+0.00).

**Availability**

SICI: 0968-090X(199606)4C:3L:113:MTSE; 1-S

Electronic Journal Document Number: S0968-090X(96)00006-X.

**Publication year**

1996.

**Language**

EN.

**Publication type**

J Journal Paper.

**Treatment codes**

P Practical.

**Abstract**

A microscopic **traffic** simulator (MITSIM) has been developed for modeling **traffic** networks with advanced **traffic** control, route guidance and surveillance systems. MITSIM represents networks in detail and simulates individual **vehicle** movements using car following, **lane** changing, and **traffic** signal responding logic. A probabilistic route choice **model** is used to capture drivers' route choice decisions in the presence of real time **traffic** information provided by route guidance systems. The simulator is a component of a larger system for evaluating **traffic** management systems and interacts with a surveillance module that can represent a wide variety of sensors (e.g. loop detectors, area sensors, probe vehicles, etc.) and a **traffic** management module which sets **traffic** signals and signs, routing recommendations, etc. MITSIM is coded in C++ using object-oriented design and supports distributed implementation. It includes a graphical user interface for animating **vehicle** movements in the network and displaying aggregate **traffic** information such as speed and density. (24 refs).

**Descriptors**

automated-highways; computer-animation; digital-simulation; graphical-user-interfaces; object-oriented-methods; probability.

**Keywords**

microscopic **traffic** simulator; MITSIM; dynamic **traffic** management system evaluation; **vehicle movement** animation; advanced **traffic** control; route guidance; surveillance systems; individual **vehicle** movements; car following; **lane** changing; **traffic** signal responding logic; aggregate **traffic** information display; real time **traffic** information; loop detectors; area sensors; probe vehicles; C ; object oriented design; distributed implementation; graphical user interface.

**Classification codes**

C7445 (Traffic engineering computing).  
C7420 (Control engineering computing).  
C3360B (Road-traffic system control).  
C1140Z (Other topics in statistics).  
C6110F (Formal methods).  
C6180G (Graphical user interfaces).

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Thomas Schulze, Thomas Fliess

December 1997 **Proceedings of the 29th conference on Winter simulation**Full text available: [pdf\(753.84 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

# 2 [Logistics/transportation applications: Traffic simulation of roundabouts in Switzerland](#)

Willi Bernhard, Peter Portmann

December 2000 **Proceedings of the 32nd conference on Winter simulation**Full text available: [pdf\(1.44 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

In Switzerland, roundabouts enjoy a large and growing popularity. As a self-organizing system, they replace more and more the traditional traffic light systems. This article focuses on the modeling and simulation of a double tracked roundabout near Lucerne (Switzerland). The simulation results were used for decision purposes; in order to find out whether a single or double tracked roundabout should be used there. All simulations were done with the simulation language SIMSCRIPT II.5.

# 3 [Traffic simulation based on the high level architecture](#)

Ulrich Kelin, Thomas Schulze, Steffen Straßburger

December 1998 **Proceedings of the 30th conference on Winter simulation**Full text available: [pdf\(487.63 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

# 4 [Verification, validation and accreditation: Well-defined intended uses: an explicit requirement for accreditation of modeling and simulation applications](#)

Osman Balci, William F. Ormsby

December 2000 **Proceedings of the 32nd conference on Winter simulation**Full text available: [pdf\(229.19 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

A modeling and simulation (M&S) application is built for a specific purpose and its acceptability assessment is carried out with respect to that purpose. The accreditation decision for an M&S application is also made with respect to that purpose. The purpose is commonly expressed in terms of "intended uses." The quality of expressing the intended uses significantly affects the quality of the acceptability assessment as well as the quality of making the accreditation decision. The purpose of this ...

# 5 [Traffic control](#)

CORPORATE Gesellschaft für Mediales Gestalten GmbH

January 1997 **ACM SIGGRAPH 97 Visual Proceedings: The art and interdisciplinary programs of SIGGRAPH '97**

Full text available:  [pdf\(288.92 KB\)](#) Additional Information: [full citation](#), [index terms](#)

6 Towards Truly Agent-Based Traffic and Mobility Simulations

Michael Balmer, Nurhan Cetin, Kai Nagel, Bryan Raney

July 2004 **Proceedings of the Third International Joint Conference on Autonomous Agents and Multiagent Systems - Volume 1**

Full text available:  [pdf\(342.32 KB\)](#) Additional Information: [full citation](#), [abstract](#), [index terms](#)

Traveling is necessary and desirable; yet, it imposes external costs on other people. Quantitative methods help finding a balance. Multi-agent simulations seem an obvious possibility here. A real world traffic simulation consists of many modules, all requiring different expertise. The paper discusses how such modules can be coupled to a complete simulation system, how such a system can be made fast enough to deal with real-world sizes (several millions of travelers), and how agent memory can be ...

7 Smooth is better than sharp: a random mobility model for simulation of wireless networks

Christian Bettstetter

July 2001 **Proceedings of the 4th ACM international workshop on Modeling, analysis and simulation of wireless and mobile systems**

Full text available:  [pdf\(746.82 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper presents an enhanced random mobility model for simulation-based studies of wireless networks. Our approach makes the movement trace of individual mobile stations more realistic than common approaches for random movement.

After giving a survey of mobility models found in the literature, we give a detailed mathematical formulation of our model and outline its advantages. The movement concept is based on random processes for speed and direction control in which the new values ...

**Keywords:** border effects, mobility modeling, modeling and simulation, random direction model, random waypoint model, user movement, wireless and mobile communication networks

8 The design, implementation, application and comparison of two highly automated traffic simulators

Peter Lorenz, Thomas Schulze, Thomas J. Schriber

December 1994 **Proceedings of the 26th conference on Winter simulation**

Full text available:  [pdf\(897.56 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

9 A simulation-based analysis of parking system performance

Sabah U. Randhawa, Stephen J. White, Sheikh Burhanuddin


December 1993 **Proceedings of the 25th conference on Winter simulation**

Full text available:  [pdf\(681.01 KB\)](#) Additional Information: [full citation](#), [references](#)

10 Mobility modeling in wireless networks: categorization, smooth movement, and border effects

Christian Bettstetter

July 2001 **ACM SIGMOBILE Mobile Computing and Communications Review**, Volume 5  
Issue 3

Full text available:  [pdf\(1.17 MB\)](#)


Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The movement pattern of mobile users plays an important role in performance analysis of wireless computer and communication networks. In this paper, we first give an overview and classification of mobility models used for simulation-based studies. Then, we present an enhanced random mobility model, which makes the movement trace of mobile stations more realistic than common approaches for random mobility. Our movement concept is based on random processes for speed and direction control in which ...

#### 11 The peloton bicycling simulator

Gianpaolo U. Carraro, Mauricio Cortes, John T. Edmark, J. Robert Ensor

February 1998 **Proceedings of the third symposium on Virtual reality modeling language**

Full text available:  [pdf\(1.65 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

#### 12 Distributed interactive simulation: its past, present, and future

Deborah A. Fullford

November 1996 **Proceedings of the 28th conference on Winter simulation**


Full text available:  [pdf\(672.04 KB\)](#)

Additional Information: [full citation](#), [references](#)

#### 13 The winter simulation conference: perspectives of the founding fathers

Michel Araten, Harold G. Hixson, Austin C. Hoggatt, Philip J. Kiviat, Michael F. Morris, Arnold Ockene, Julian Reitman, Joseph M. Sussman, James R. Wilson

December 1992 **Proceedings of the 24th conference on Winter simulation**

Full text available:  [pdf\(2.83 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

#### 14 Dynamic simulation-assignment methodology to evaluate in-vehicle information strategies in urban traffic networks

R. Jayakrishnan, Hani S. Mahmassani

December 1990 **Proceedings of the 22nd conference on Winter simulation**

Full text available:  [pdf\(740.93 KB\)](#)

Additional Information: [full citation](#), [references](#), [index terms](#)

#### 15 Session 2B: multiagent simulation: Multi agent simulation of unorganized traffic

Praveen Paruchuri, Alok Reddy Pullalarevu, Kamalakar Karlapalem

July 2002 **Proceedings of the first international joint conference on Autonomous agents and multiagent systems: part 1**

Full text available:  [pdf\(364.26 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Traffic simulation is one of the most complex simulation projects that can be undertaken. The main issues are: modeling of autonomous behavior of drivers, modeling of their interaction, and ability to simulate the traffic and procure reliable realistic results. Organized traffic with drivers heeding to well defined traffic rules is less dynamic and erratic, than modeling unorganized traffic, wherein the drivers either do not heed to well defined traffic rules, or there are no traffic rules in pl ...

#### 16 Simulating network traffic flows with a massively parallel computing architecture

Gang-Len Chang, Thanavat Junchaya

December 1993 **Proceedings of the 25th conference on Winter simulation**

Full text available:  [pdf\(706.81 KB\)](#) Additional Information: [full citation](#), [references](#)

17 Simulation of a traffic network

Jesse H. Katz

August 1963 **Communications of the ACM**, Volume 6 Issue 8

Full text available:  [pdf\(671.48 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#)



18 Applications in logistics, transportation, and distribution: Freight simulation: dynamic freight traffic simulation providing real-time information

Jinghua Xu, Kathleen L. Hancock, Frank Southworth

December 2003 **Proceedings of the 35th conference on Winter simulation: driving innovation**

Full text available:  [pdf\(447.82 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

The paper describes a prototype Dynamic Freight Traffic Simulation model called DyFTS, constructed for studying the effects of highly developed information technologies and logistic strategies on freight transportation. DyFTS is designed as a highly adaptable system that can be easily embedded into a more comprehensive transportation simulation model. Various decision-making processes are formulated, such as goods-to-vehicle assignment, departure time choice and pre-trip routing, and en-route ...



19 The role of interactive graphics when applying traffic simulation models

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### 1 [Urban traffic simulation with psycho-physical vehicle-following models](#)

Thomas Schulze, Thomas Fliess

December 1997 **Proceedings of the 29th conference on Winter simulation**Full text available: [pdf\(753.84 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

### 2 [Logistics/transportation applications: Traffic simulation of roundabouts in Switzerland](#)

Willi Bernhard, Peter Portmann

December 2000 **Proceedings of the 32nd conference on Winter simulation**Full text available: [pdf\(1.44 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

In Switzerland, roundabouts enjoy a large and growing popularity. As a self-organizing system, they replace more and more the traditional traffic light systems. This article focuses on the modeling and simulation of a double tracked roundabout near Lucerne (Switzerland). The simulation results were used for decision purposes; in order to find out whether a single or double tracked roundabout should be used there. All simulations were done with the simulation language SIMSCRIPT II.5.

### 3 [Towards Truly Agent-Based Traffic and Mobility Simulations](#)

Michael Balmer, Nurhan Cetin, Kai Nagel, Bryan Raney

July 2004 **Proceedings of the Third International Joint Conference on Autonomous Agents and Multiagent Systems - Volume 1**Full text available: [pdf\(342.32 KB\)](#) Additional Information: [full citation](#), [abstract](#), [index terms](#)

Traveling is necessary and desirable; yet, it imposes external costs on other people. Quantitative methods help finding a balance. Multi-agent simulations seem an obvious possibility here. A real world traffic simulation consists of many modules, all requiring different expertise. The paper discusses how such modules can be coupled to a complete simulation system, how such a system can be made fast enough to deal with real-world sizes (several millions of travelers), and how agent memory can be ...

### 4 [Traffic simulation based on the high level architecture](#)

Ulrich Kelin, Thomas Schulze, Steffen Straßburger

December 1998 **Proceedings of the 30th conference on Winter simulation**Full text available: [pdf\(487.63 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)



Smooth is better than sharp: a random mobility model for simulation of wireless networks

Christian Bettstetter

July 2001 **Proceedings of the 4th ACM international workshop on Modeling, analysis and simulation of wireless and mobile systems**

Full text available:  [pdf\(746.82 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper presents an enhanced random mobility model for simulation-based studies of wireless networks. Our approach makes the movement trace of individual mobile stations more realistic than common approaches for random movement.

After giving a survey of mobility models found in the literature, we give a detailed mathematical formulation of our model and outline its advantages. The movement concept is based on random processes for speed and direction control in which the new values ...

**Keywords:** border effects, mobility modeling, modeling and simulation, random direction model, random waypoint model, user movement, wireless and mobile communication networks



6 The design, implementation, application and comparison of two highly automated traffic simulators

Peter Lorenz, Thomas Schulze, Thomas J. Schriber

December 1994 **Proceedings of the 26th conference on Winter simulation**

Full text available:  [pdf\(897.56 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)



7 A simulation-based analysis of parking system performance

Sabah U. Randhawa, Stephen J. White, Sheikh Burhanuddin

December 1993 **Proceedings of the 25th conference on Winter simulation**


Full text available:  [pdf\(681.01 KB\)](#) Additional Information: [full citation](#), [references](#)



8 Mobility modeling in wireless networks: categorization, smooth movement, and border effects

Christian Bettstetter

July 2001 **ACM SIGMOBILE Mobile Computing and Communications Review**, Volume 5 Issue 3

Full text available:  [pdf\(1.17 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The movement pattern of mobile users plays an important role in performance analysis of wireless computer and communication networks. In this paper, we first give an overview and classification of mobility models used for simulation-based studies. Then, we present an enhanced random mobility model, which makes the movement trace of mobile stations more realistic than common approaches for random mobility. Our movement concept is based on random processes for speed and direction control in which ...



9 The peloton bicycling simulator

Gianpaolo U. Carraro, Mauricio Cortes, John T. Edmark, J. Robert Ensor

February 1998 **Proceedings of the third symposium on Virtual reality modeling language**

Full text available:  [pdf\(1.65 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)



**10 Distributed interactive simulation: its past, present, and future**

Deborah A. Fullford

November 1996 **Proceedings of the 28th conference on Winter simulation**Full text available:  [pdf\(672.04 KB\)](#) Additional Information: [full citation](#), [references](#)**11 Verification, validation and accreditation: Well-defined intended uses: an explicit requirement for accreditation of modeling and simulation applications**

Osman Balci, William F. Ormsby

December 2000 **Proceedings of the 32nd conference on Winter simulation**Full text available:  [pdf\(229.19 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

A modeling and simulation (M&S) application is built for a specific purpose and its acceptability assessment is carried out with respect to that purpose. The accreditation decision for an M&S application is also made with respect to that purpose. The purpose is commonly expressed in terms of "intended uses." The quality of expressing the intended uses significantly affects the quality of the acceptability assessment as well as the quality of making the accreditation decision. The purpose of this ...

**12 The winter simulation conference: perspectives of the founding fathers**


Michel Araten, Harold G. Hixson, Austin C. Hoggatt, Philip J. Kiviat, Michael F. Morris, Arnold Ockene, Julian Reitman, Joseph M. Sussman, James R. Wilson

December 1992 **Proceedings of the 24th conference on Winter simulation**Full text available:  [pdf\(2.83 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)**13 Dynamic simulation-assignment methodology to evaluate in-vehicle information strategies in urban traffic networks**

R. Jayakrishnan, Hani S. Mahmassani

December 1990 **Proceedings of the 22nd conference on Winter simulation**Full text available:  [pdf\(740.93 KB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)**14 Session 2B: multiagent simulation: Multi agent simulation of unorganized traffic**

Praveen Paruchuri, Alok Reddy Pullalarevu, Kamalakar Karlapalem

July 2002 **Proceedings of the first international joint conference on Autonomous agents and multiagent systems: part 1**Full text available:  [pdf\(364.26 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Traffic simulation is one of the most complex simulation projects that can be undertaken. The main issues are: modeling of autonomous behavior of drivers, modeling of their interaction, and ability to simulate the traffic and procure reliable realistic results. Organized traffic with drivers heeding to well defined traffic rules is less dynamic and erratic, than modeling unorganized traffic, wherein the drivers either do not heed to well defined traffic rules, or there are no traffic rules in pl ...

**15 Simulating network traffic flows with a massively parallel computing architecture**

Gang-Len Chang, Thanavat Junchaya

December 1993 **Proceedings of the 25th conference on Winter simulation**Full text available:  [pdf\(706.81 KB\)](#) Additional Information: [full citation](#), [references](#)**16 Simulation of a traffic network**

Jesse H. Katz

August 1963 **Communications of the ACM**, Volume 6 Issue 8Full text available:  [pdf\(671.48 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#)**17 Applications in logistics, transportation, and distribution: Freight simulation: dynamic freight traffic simulation providing real-time information**

Jinghua Xu, Kathleen L. Hancock, Frank Southworth

December 2003 **Proceedings of the 35th conference on Winter simulation: driving innovation**Full text available:  [pdf\(447.82 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

The paper describes a prototype Dynamic Freight Traffic Simulation model called DyFTS, constructed for studying the effects of highly developed information technologies and logistic strategies on freight transportation. DyFTS is designed as a highly adaptable system that can be easily embedded into a more comprehensive transportation simulation model. Various decision-making processes are formulated, such as goods-to-vehicle assignment, departure time choice and pre-trip routing, and en-route ...

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December 1990 **Proceedings of the 22nd conference on Winter simulation**Full text available:  [pdf\(969.11 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)**19 Simulation of traffic flow during emergency evacuations: a microcomputer based modeling system**

Ajay K. Rathi, Rajendra S. Solanki

December 1993 **Proceedings of the 25th conference on Winter simulation**Full text available:  [pdf\(757.04 KB\)](#) Additional Information: [full citation](#), [references](#)**20 Simulation analysis of two adjacent traffic signals**

Kiyoshi Yamada, Tenny N. Lam

December 1985 **Proceedings of the 17th conference on Winter simulation**Full text available:  [pdf\(836.26 KB\)](#) Additional Information: [full citation](#), [abstract](#)

The traffic delay and signal timing offset of adjacent signalized intersections are studied by stochastic computer simulation. The emphasis is on the effect of turning movements on traffic signal coordination. Coordination synchronizes the flow of traffic through a sequence of signals in order to minimize delays and stops. It's application is traditionally restricted to major thoroughfares where turning movements from side streets are insignificant. This study attempts to show that there are ...

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